REMARKS

This Application has been carefully reviewed in light of the Office Action mailed January 23, 2006 ("Office Action"). In the Office Action, Claims 1-26 are pending in the Application and Claims 4 and 15 are withdrawn. The Examiner rejects Claims 1-26. Applicants have amended Claims 1, 11, 16, 18, and 19 and canceled Claim 13. Applicants submit that no new matter has been added with these amendments. As described below, Applicants believe all claims to be allowable over the cited references. Therefore, Applicants respectfully request reconsideration and full allowance of all pending claims.

Section 112 Rejection

The Examiner rejects Claim 13 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants intended to cancel Claim 13 in the previous Response to Office Action submitted on December 1, 2005, but mistakenly deleted a portion of the claim without formally amending or canceling the claim. Claim 13 has now been canceled. Applicants apologize for the oversight and appreciate the Examiner's notation of this discrepancy.

Section 103 Rejections

The Examiner rejects Claims 1-26 under 35 U.S.C. § 103(a) as being unpatentable over various combinations of U.S. Patent No. 6,236,664 issued to Erreygers ("*Erreygers*"), U.S. Patent No. 6,088,385 issued to Liu ("*Liu*"), U.S. Patent No. 6,658,049 issued to McGhee et al. ("*McGhee*"), and U.S. Patent No. 4,878,232 issued to Fisher ("*Fisher*"). Applicants respectfully request reconsideration and allowance of Claims 1-3, 5-14, and 16-26 for the following reasons.

The Claims are Allowable over the Cited References

Applicants respectfully submit that the proposed combinations of references do not disclose, teach, or suggest each and every limitation recited in Applicants' claims. For example, Claim 1, as amended, recites:

A method for providing greater reach of a DSL signal comprising:

receiving an incoming DSL signal including a data signal;

demodulating the data signal;

requantizing the demodulated data signal by determining a true value constellation associated with each bit of data in the modulated data signal and resetting the value of that bit to the value of the true value constellation to acquire underlying data in the data signal and transform the data signal into a regenerated form;

modulating the requantized data signal;

amplifying the modulated requantized data signal; and

transmitting the amplified signal in a regenerated form.

In the Office Action, the Examiner continues to rely on the proposed *Erreygers-Liu* combination, and specifically *Liu*, for disclosure of Applicants' step of "requantizing." Applicants respectfully submit, however, that the proposed *Erreygers-Liu* combination does not disclose, teach, or suggest "requantizing the demodulated data signal by determining a true value constellation associated with each bit of data in the modulated data signal and resetting the value of that bit to the value of the true value constellation and transform the data signal into a regenerated form," as recited in amended Claim 1.

In the Office Action, the Examiner responds to Applicants' previous arguments with regard to the step of "requantizing" by pointing to Column 4, line 67 through Column 5, line 7 for disclosure of the recited features. (Office Action, page 9). Applicants respectfully submit, however, that this portion of the reference merely relates to the T1E1.4 ADSL standards. Specifically, *Liu* states:

According to the T1E1.4 ADSL standards, data bits are grouped and processed every 250 μsec. The number of bits that can be processed over one such time frame is the summation of the bits allocated for each subchannel determined from the previous channel response measurement. For a given number of bits assigned to a certain subchannel, quadrature amplitude modulation (QAM) is used to convert bits to a complex value, which is then modulated by the subchannel carrier at the corresponding frequency . . .

(Column 4, line 61 through Column 5, line 2). Thus, *Liu* indicates that according to standard QAM techniques bits are grouped and then each group is converted to a complex value. The reference does not disclose, teach, or suggest, however, "determining a **true value** constellation associated with **each bit** of data in the modulated data signal and resetting the value of that bit to the value of the **true value** constellation and **transform the data signal into a regenerated form**," as recited in amended Claim 1. Certainly, there is no disclosure in *Liu* of performance of these operations by DMT Receiver Core 260, as relied upon by the Examiner.[1] Accordingly, Applicants respectfully disagree that the recited claim language is disclosed in *Liu*.

Independent Claims 11, 16, 18, and 19 recite certain features that are analogous to those discussed above. For example, Claim 11 recites "requantizing the demodulated data portion by determining a true value constellation associated with each bit of data in the modulated data portion and resetting the value of that bit to the value of the true value constellation to acquire underlying data in the data portion and transform the data portion into a regenerated form." As another example, Claim 16 recites "a means for requantizing the demodulated data portion by determining a true value constellation associated with each bit of data in the modulated data portion and resetting the value of that bit to the value of the true value constellation and transform the data portion into a regenerated form." Claim 18 recites "a means for requantizing the demodulated data signal by determining a true value constellation associated with each bit of data in the modulated

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[1] As discussed in the Response to Office Action submitted on December 1, 2005, *Liu* merely discloses that "DMT Receiver Core 260 is responsible for extracting the original data stream from the numerous, sub-carriers within any specific received DMT symbol block." (Column 6, lines 34-36). There is no further disclosure in *Liu* of the operations of DMT Receiver Core 260. Instead, the focus in *Liu* is on the fact that signal processing capability requirements are reduced by a factor M. (Column 6, lines 41-43). This is due to the fact that "[b]ased on a scaling factor M negotiated between transceiver 200 and an upstream transceiver, DMT Receiver Core 260 will only process one out of every M received blocks of DMT symbols." (Column 6, lines 36-40). Accordingly, even to the limited extent that *Liu* discloses that "DMT Receiver Core 260 is responsible for extracting the original data stream from . . . the DMT symbol block" (Column 6, lines 34-36), there is simply no disclosure in *Liu* of "requantizing the demodulated data signal by determining a true value constellation associated with each bit of data in the modulated data signal and resetting the value of that bit to the value of the true value constellation and transform the data signal into a regenerated form," as recited in amended Claim 1.

data signal and resetting the value of that bit to the value of the true value constellation and transform the data signal into a regenerated form." As still another example, Claim 19 recites "the first conditioning circuit being operable to . . . demodulate, requantize, and remodulate the first data signal to produce a first remodulated data signal, the first data signal requantized by determining a true value constellation associated with each bit of data in the modulated first data signal and resetting the value of that bit to the value of the true value constellation to acquire underlying data in the first data signal and transform the first data signal into a regenerated form." Claim 19 also recites "the second conditioning circuit being operable to . . . demodulate, requantize, and remodulate the second data signal to produce a second remodulated data signal, the second data signal requantized by determining a true value constellation associated with each bit of data in the modulated second data signal and resetting the value of that bit to the value of the true value constellation to acquire underlying data in the second data signal and transform the second data signal into a regenerated form." Accordingly, for reasons similar to those discussed above with regard to Claim 1, Applicants respectfully submit that the cited references do not disclose, teach, or suggest each and every limitation of Applicants' Claims 11, 16, 18, and 19.

Dependent Claims 2-3 and 5-10, 12 and 14-15, 17, and 20-26 depend from independent Claims 1, 11, 16, and 19 respectively. Since Claims 2-3, 5-10, 12, 14-15, 17, and 20-26 incorporate the limitations of their respective independent claims, which Applicants have shown above to be allowable, Claims 2-3, 5-10, 12, 14-15, 17, and 20-26 are allowable for at least this reason. Additionally, Applicants respectfully submit that Claims 2-3, 5-10, 12, 14-15, 17, and 20-26 also recite features that are not disclosed, taught, or suggested in the cited references. Because Applicants have shown the independent claims to be allowable, however, Applicants have not provided detailed arguments with respect to Claims 2-3, 5-10, 12, 14-15, 17, and 20-26. Applicants remain ready to do so if it becomes appropriate.

For at least these reasons, Applicants respectfully request reconsideration and allowance of Claims 1-3, 5-12, and 14-26.

The Proposed Combinations of References are Improper

Because Applicants continue to believe that the proposed combinations of references are improper, Applicants reiterate Applicants' previous arguments that it would not have been obvious to one skilled in the art to make the proposed combinations.

Specifically, with regard to Applicants' independent Claims 1, 11, and 16 and the proposed *Erreygers-Liu* combination, the Examiner speculates "it would have been obvious" to combine the transceivers disclosed in *Liu* with the repeater disclosed in *Erreygers* "for the purpose of implementing flexible and scaleable transceivers in the receiver that may have greater compatibility with various types of ADSL transceivers at either the CPE side or central office side of the network." (Office Action, page 3). With regard to Claims 18 and 25 and the proposed *Erreygers-Liu-McGhee* combination, the Examiner speculates "it would have been obvious to . . . provide means to split/recombine/amplify the voice and data signals after being processed by the repeater for the purpose of allowing the repeater to be used on DSL lines that contain both data and voice signals." (Office Action, page 6). The Examiner's conclusory statements, however, are mere speculation and do not provide the suggestion or motivation necessary to make the proposed combination. Rather, Applicants respectfully submit that the Examiner has merely pieced together disjointed portions of references using Applicants' claims as an instruction manual. The M.P.E.P. and Federal Circuit case law warn against using an applicant's disclosure as a blueprint to reconstruct the claimed invention.[2] Accordingly,

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[2] For example, the M.P.E.P. states, "The tendency to resort to 'hindsight' based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." M.P.E.P. § 2142. The governing Federal Circuit cases are equally clear. "A critical step in analyzing the patentability of claims pursuant to [35 U.S.C. § 103] is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. . . . Close adherence to this methodology is especially important

Applicants respectfully submit that the proposed *Erreygers-Liu* and *Erreygers-Liu-McGhee* combinations are improper and should not be used here to reject Applicants' claims.

The combinations of references used to reject Applicants' dependent claims are similarly deficient. Again, the Examiner has also merely pieced together disjointed portions of references to reject Applicants' claims without providing the adequate motivation to combine the references. For example, with regard to Claims 2 and 7 and the proposed *Erreygers-Liu-McGhee* combination, the Examiner speculates "it would have been obvious to . . . recombine the voice and data signals after being processed by the repeater for the purpose of allowing the repeater to be used on DSL lines that contain both data and voice signals." (Office Action, page 7). With regard to Claims 9-10 and the proposed *Erreygers-Liu-Fisher* combination, the Examiner speculates "it would have been obvious to . . . implement a resistive hybrid bridge for the bridge specified in *Liu* as a matter of design choice (for example, resistor, based circuits take up less space than inductors)." (Office Action, page 8). The Examiner's conclusory statements, however,

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in cases where the very ease with which the invention can be understood may prompt one 'to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.'" *In re Kotzab,* 217 F.3d 1365, 1369, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted). In *In re Kotzab,* the Federal Circuit noted that to prevent the use of hindsight based on the invention to defeat patentability of the invention, the court requires the Examiner to show a motivation to combine the references that create the case of obviousness. *See id. See also, e.g., Grain Processing Corp. v. American Maize-Products,* 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988). Similarly, in *In re Dembiczak,* the Federal Circuit reversed a finding of obviousness by the Board, explaining that the required evidence of such a teaching, suggestion, or motivation is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

> Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.* Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted).

are again just mere speculation and do not provide the suggestion or motivation necessary to make the proposed combinations. Since the Examiner has not provided a sufficient teaching, suggestion, or motivation in the prior art and because the Examiner has used Applicants' claims as an instruction manual to piece together disjointed portions of references, Applicants respectfully submit that the Examiner's conclusions of obviousness are improper under the M.P.E.P. and governing Federal Circuit case law.

For at least these reasons, Applicants respectfully request reconsideration and allowance of Claims 1-3, 5-12, and 14-26.
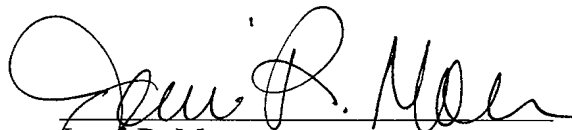
CONCLUSION

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending claims.

If the Examiner feels that a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to contact Jenni R. Moen, Attorney for Applicants, at the Examiner's convenience at (214) 953-6809.

Applicants believe that no fee is due, however, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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